



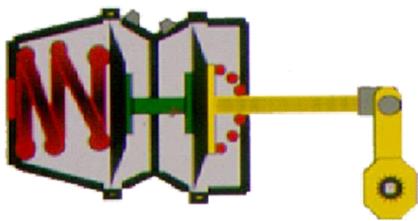
Keep Moving with Piston Brake Chambers

Road calls, tow trucks, door traffic and out-of-service issues can kill any maintenance budget. Air leaks that prevent brakes from releasing are all too often a common occurrence on vehicles equipped with air brakes. The brake chambers could be the culprit of this costly situation.

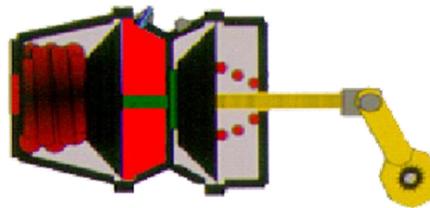
Approximately 60 years ago, the trucking industry recognized that vehicles should have a mechanical device incorporated within the braking system to allow the secure parking of a heavy-duty commercial vehicle. In 1956, MGM Brakes developed the first spring brake. This product is the basic technology for most brake chambers in production today.

Currently, there are two types of combination brake chambers used on S-Cam, Air Disc and Wedge brakes systems. They are the double diaphragm combination brake chamber and the lesser known piston/diaphragm combination brake chamber. These brake chambers are the heart of the braking system as they convert air pressure into mechanical force. Both types of chambers are designed to provide two functions that work independently; a “service brake” to stop the vehicle and the “parking/emergency brake” to keep the vehicle from moving while parked along with acting as an emergency brake to stop the vehicle.

The parking/emergency brake system utilizes a steel spring that expands when supply air is exhausted to push the steel push-rod out of the brake chamber, which sets the brakes on the vehicle. Compressed air from the vehicle’s air system is used to inflate a diaphragm in the sealed housing on the spring side of the chamber to compress the steel spring. In turn, this will retract the push-rod back into the housing and release the brakes on the vehicle.



Park Brakes Applied



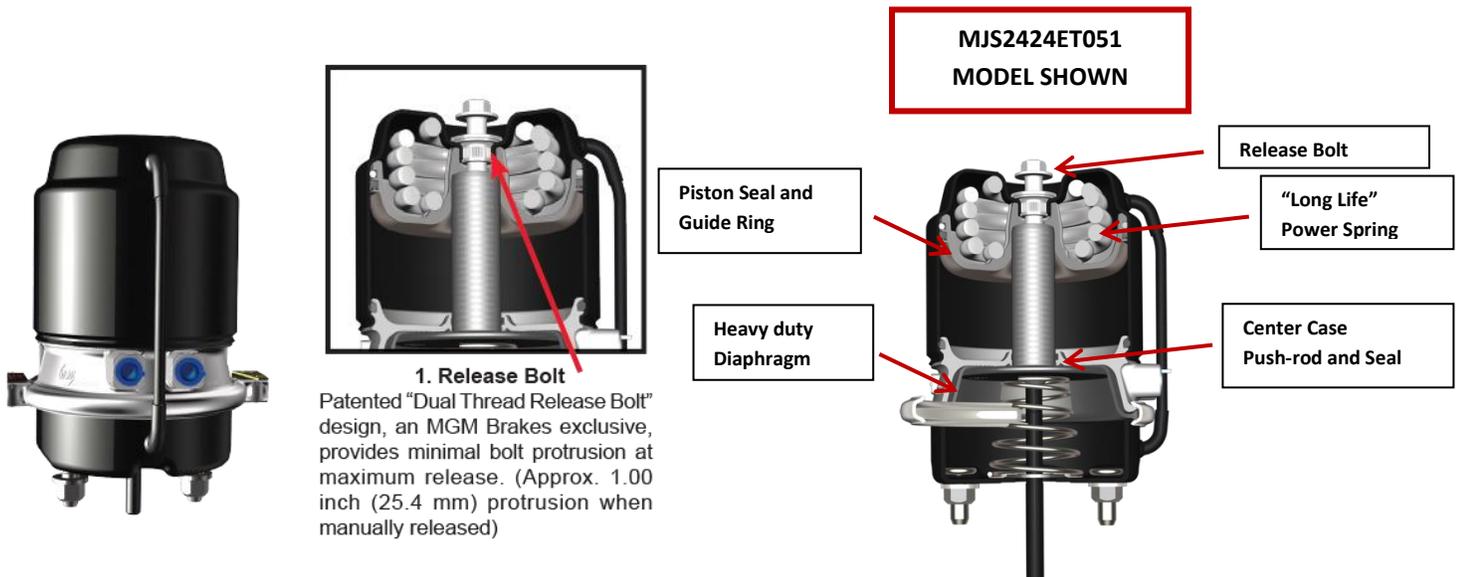
All Brakes Released



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This is a cost-effective design that works very well. However, the limitation of this design is that over time the rubber diaphragms could rupture. This is due to the diaphragm wearing out during normal vehicle operation or the power spring breaks and punctures the diaphragm causing the loss of air. When this occurs on the spring side of the chamber, the result is a parking brake that can't be released, resulting in a vehicle breakdown. Guess where this usually happens? NOT IN THE SHOP!

While both piston brakes and double diaphragm brakes provide the same function, the piston brake chamber has some distinctive advantages over the double diaphragm brake chambers. The piston brake chamber design was developed to help drastically reduce road calls due to parking brakes application caused by spring side air loss. A piston brake utilizes a metal piston with rubber seals around the circumference on the chamber's spring side. This metal piston cradles the steel power spring and seals to the outer walls of the housing. By replacing the rubber diaphragm with a metal piston and seal, the potential of wearing and/or puncturing the diaphragm is eliminated. With the piston brake design, even if the outer seals were to leak, the air loss would be insufficient to cause the power spring to allow the parking brake to engage. Many fleets have discovered this feature and prefer this system to the double diaphragm brake chamber. They are no longer locked up on the side of the road calling for a tow truck.





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The MGM piston brake chamber offers many advantages when compared to double diaphragm chambers. It utilizes an aluminum piston that cradles the power spring which allows the use of a significantly more powerful spring, providing far superior output force compared to same size double diaphragm chambers (up to 502 more lbs.). This allows increased grade holding for heavily-loaded vehicles such as fire and emergency vehicles, off-road equipment and heavy-haul vehicles. MGM piston brake chambers also incorporate a patented, dual-threaded integral release bolt, which allows these chambers to be installed in tight areas. There is no weatherseal plug to install as typically on double diaphragm brakes, which is commonly left off allowing dirt and debris to enter the spring brake. Another MGM feature is the external breather tube, which is designed to keep debris out of the spring side that could cause damage within the chamber resulting in shorter service life. The “no clash” parking spring is surrounded by a steel head with a heat-fused epoxy coating for long service life.

The piston brake is available for S-Cam, air disc, and wedge brake systems. They are manufactured in ten different sizes to accommodate any application. The piston brake is built for increased reliability and durability in a compact design. They are a direct replacement for any double diaphragm chamber and engineered for dependable, trouble free service.